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Potential Demand for Local Fresh Produce by Mobile Markets

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Abstract: We conducted 59 interviews at six sites across the US to assess the impact of mobile markets that had received Farmers Market Promotion Program (FMPP) grants. We found that while mobile markets can be important outlets for producers and improve access to fresh produce for consumers, they are often costly to operate and dwarfed by the distribution of free produce by mobile food pantries operated by food banks. Several of the sites provide innovative partnerships that enhanced the sustainability of the mobile markets and complemented mobile pantries. The interviews highlight the need for coordinated efforts by non-profits and policy makers in addressing markets for producers, especially beginning or small producers, and access to healthy food by the food insecure.

Introduction

US farmers have successfully produced an abundance of food, yet many areas in the US are defined as food deserts and food insecurity affects nearly 16% of the US (Feeding America, 2014). This is despite the fact that US households spend the lowest percentage of income on food in the world (Seale, Regmi and Bernstein, 2003) and the percentage spent on food at home has declined steadily in the US over the past century (US Department of Labor, 2015).

The role of a vibrant agricultural sector to produce healthy food is crucial to food access. Small farms are the primary suppliers of fresh local food, for which the demand is increasing (USDA ERS, 2011). However, farmers are getting older (the US average age is 58.3 years) and the number of beginning farmers decreased by 20% between 2007 and 2012 (USDA, 2014). As a result, from 2007 to 2012, the US lost 4.3% of its farms while farm size increased (USDA 2014), raising concern about who will farm in the future.

Mobile markets and mobile food pantries are potential channels to increase access to healthy, fresh foods. They make locally grown produce accessible by reaching communities that do not have access to a brick and mortar grocery store. They can reach multiple communities and deliver produce while it is fresh because they are mobile. In addition, they may provide increased convenience to consumers and increased markets to produce farmers, especially beginning farmers.

Mobile markets and mobile food pantries differ in structure, mission, and challenges. Mobile markets can be non-profit, for profit, offer only fresh produce, or include a full range of grocery items. The produce can be local, organic, or conventional and sold at full or discounted prices. Non-profit mobile markets require outside funding; food prices usually cover only the cost of product and not the full cost of labor, transport and operations. Mobile food pantries distribute free food. Some offer a full range of foods while others focus on fresh items, especially produce. The latter is a response to critiques about the nutritional quality of food pantry food (Akobundu et al. 2004). Furthermore, food pantries no longer operate as emergency food sources; many people rely on them as a regular source of food (Daponte et al. 1998), hence nutritional quality needs to support long-term health. Mobile pantries are sustained by volunteer labor, donations,

and a food bank system that sources and distributes food. Donations are tax deductible and donors of food are protected by the Good Samaritan Act.

In this case study of six communities in the US (Adrian, Michigan; Baltimore, Maryland; Concord, California; New Orleans, Louisiana; Santa Fe, New Mexico; and Worcester Massachusetts) we investigate whether mobile markets and mobile food pantries can provide farmers with a venue to increase their sales as well as increase access to healthy foods by the food insecure. We interview mobile market managers, organizations that administer or partner with mobile markets (from hospitals to farmers markets), regional food banks that operate mobile food pantries, food pantries, mobile food pantries, and farmers. The farmers' interviews focus on the potential of selling to mobile markets and include insights about obstacles to becoming a farmer or increasing sales.

In total we conduct 59 in-depth interviews. The interviews are professionally transcribed. The transcripts are coded to address the following questions: who utilizes the mobile market/pantry; where is the food sourced from; how are purchase prices set; if sold, at what price to consumers, if given away, what criterion is used; to what extent do mobile markets/pantries increase sales to farmers or under what circumstances; to what extent or under what circumstances do mobile markets/pantries increase access to consumers.

Study Sites

This study was funded by the US Department of Agriculture (USDA) Agricultural Marketing Service (AMS) to assess the impact of mobile markets that had received Farmers Market Promotion Program (FMPP) grants. Therefore the six study sites were selected because: an organization at that location had received an FMPP grant for a mobile market; the mobile market had been operational for at least a year so that we something to assess; and the sites represented different regions of the US and different sized communities. Baltimore and New Orleans represent larger cities. Worcester and Concord are located near large metropolitan areas, while Santa Fe and Adrian are smaller cities located in rural counties.

Concord, California is a suburban city in the East Bay. There is an abundance of fresh produce that is available because it is close to large-scale fresh produce production that operates nearly year round and there are over 60 farmers markets in the Bay Area. However, while Concord has a relatively low poverty rate (Table 1), it is a food desert (USDA ERS, 2015). The high cost of living, particularly housing, in the East Bay Area mean the official poverty cut-offs may not reflect the true level of economic stress.

New Orleans is also located in a region that has a 12 month growing season. Louisiana has more than 1,912 fruit and vegetable farms and orchards (USDA, 2014). Farms in Louisiana are small compared to California; nearly half of Louisiana's 28,000 farmers have less than 50 acres (USDA, 2014). However, despite the climate and food culture, direct sales of fresh local produce is limited in New Orleans; there are only three farmers markets and each has a dozen or fewer vendors. The high rates of poverty (Table 1) likely limit demand.

Baltimore is also plagued with high rates of poverty and food insecurity (Table 1) despite being surrounded by farmland and having numerous urban agriculture projects and farmers markets.

While Worcester is located near affluent Boston, it also has high levels of poverty and food insecurity (Table 1). One interesting characteristic of the community is that it has many immigrants from many different countries interested in farming and in buying ethnic produce.

Despite its reputation for attracting affluent retirees, Santa Fe has high levels of poverty and food insecurity (Table 1), particularly among children, indicative of a large income gap between native New Mexicans and the out of state retirees.

Of all the sites, Adrian had the highest levels of poverty (Table 1). The county is a very rural county that has a relatively low poverty and food insecurity rate, but Adrian itself has lost many manufacturing jobs, resulting in high levels of poverty. While the city is surrounded by farmland, direct produce sales are limited. There is a small farmers market with about 10 produce vendors located in Adrian and an even smaller one located just outside the city.

Results

At each of the sites selected for this project, we conducted in-person, semi-structured, in-depth interviews with mobile market operators who had received FMPP grants, their parent organizations if applicable, other non-profit or for-profit mobile markets, mobile food pantries and or food banks, organizations that promoted food access, and farmers. The 59 interviews involved 26 different organizations, 27 different farmers and a 4-H instructor. We interviewed multiple people at some organizations. Recruitment for the organizations was via email. Recruitment of farmers was via email or in-person at farmers markets. Participants received \$50 for their time. The interviews took place between January 11 and September 26, 2015. A script for the interviews can be found in the Appendix. All 59 interviews were recorded and transcribed by a professional transcription service. A university human subjects internal review board approved this protocol. All participants granted their informed consent.

Concord

In Concord we interviewed seven organizations involved with increasing local food access, including: an FMPP mobile market; its parent organization, a farmers' market association of 62 markets; another farmers' market association; a for-profit mobile market; a food bank; a mobile food pantry; and a non-profit gleaning organization. In addition, we interviewed three urban farmers. The interviews lasted between 48 and 113 minutes, averaging 73 minutes.

Fresh Approach is a non-profit with seven employees. It operates nutrition classes, outreach programs, a Veggie RX program, and an FMPP funded mobile market in food deserts in Contra Costa and Santa Clara counties. Fresh Approach relies on grant funds, private donations, and partnerships, e.g. with WIC, to cover salaries; an HMO, Kaiser Permanente, has helped with start-up costs of programs, usually six months of funding and ongoing grants. Its mobile market, Freshest Cargo, utilizes two trucks and has sufficient sales to cover the cost of food sold and some of the vehicle costs; their goal is for sales to cover all vehicle costs and food. The Pacific

Coast Farmers' Market Association (the parent organization of Fresh Approach) helps by filling in funding gaps. The mobile market sources from farmers at 62 farmers markets in the Bay Area and lets customers know the source of the produce. They purchase organic and conventional produce at wholesale prices, screening vendors by price, for sufficient quantity, and for sustainable practices, such as conventional farms not spraying fruit directly or late in season. Freshest Cargo operates two routes: the East Bay route with ten stops and the South Bay route with six stops. Freshest Cargo needs community partners to actively recruit people to attend the mobile market. They have found that access to locations is crucial; people will not walk more than three blocks. Each site is assessed over a six-week period for sales; only successful sites become permanent. They try to construct routes so that one stop is always a high-income stop (e.g. a state laboratory, daycare, spa and fitness center) where they sell at a 35% mark-up, which is still below the farmers' markets retail prices, to subsidize their other stops. Mark-ups at the low-income stops are between 15% and 25%. At their busy Richmond stop they have about 50 to 60 customers. At the senior center, there were three customers in one hour. In addition to low mark-ups at these stops, Freshest Cargo offers "Market Match," a coupon that allows up to \$10 in purchases per day. EBT use varies at the low-income stops; possibly due to stigma of EBT in some communities. While their low-income customers prefer local food and enjoy fruit, they do not care about organics, and some do not have access to a kitchen. In addition to fresh produce, Freshest Cargo provides their customers with information about nutrition, information about their nonprofit, EBT benefits, and recipes.

The Pacific Coast Farmers' Market Association (PCFMA) is the parent organization of Fresh Approach. It is a 501(3)(5) agricultural nonprofit that operates 62 farmers markets for about 250 vendors in six Bay Area counties. Some farms sell at all 62 markets, hence most stalls are operated by farm employees, not the farmers themselves. PCFMA continues to add farmers markets, with a preference for weekday markets to increase variety and quality; however, weekday markets are challenging to get enough sales to make it worthwhile for the farmers. PCFMA hires about 20 farmers' market managers; they also have regional managers who focus on regulatory issues, data tracking, and staff training. The market managers are responsible for collecting fees (\$42 per stall per day), set-up, break down, making sure the site is clean at the end, and customer services, such as EBT. One of PCFMA's services is helping farmers with California's regulations; they facilitate the markets by ensuring compliance. They are part of the California Market Match Consortium that provides a match up to \$10 per day at farmers markets and are trying to get the California state legislature to fund a matching program. PCFMA supports the mobile market as an outreach tool to create customers for their farmers markets. PCFMA developed a partnership with HMO Kaiser Permanente who has supported PCFMA's programs, including Fresh Approach and their mobile market Freshest Cargo.

Contra Costa Farmers' Market (CCFM) is a 501(c) 5 nonprofit that operates three year-round farmers markets with about 80 vendors total. Competition is high; vendors compete with each other at each farmers market and each farmers market competes with other markets, as well as with grocery stores. Given the number of farmers markets in the Bay Area, many farmers send employees as vendors. This makes communication with the farmers about the rules challenging for CCFM. They have one full-time and three part-time employees to operate the markets,

foster education, and promote healthy lifestyles and conscious food choices. The Walnut Creek and Orinda markets feature about 50 to 60 vendors at any given time. The affluent Walnut Creek market is the largest market and the flagship; it tends to be younger people, families, and a core of older loyal shoppers. The Orinda market customers tend to be very affluent, often sending a personal shopper or personal chef to do the shopping. The Martinez market is at the Contra Costa Medical Center. There are only three or four vendors, who do not make a lot of money. However, this market has most of the EBT sales. CCFM's total redemption of EBT is very low, only \$60 to \$70 per week.

Doorstep Farmers is a for-profit home delivery service that started in 2010. The owner started the business to educate the community about sustainable food, and to promote and support local farmers. In the first season, he went door to door to sign up customers. Currently it has 600 members and the owner has delegated the day-to-day operations to his employees. All the produce is certified organic and sourced from local farms and two wholesalers in San Francisco to provide variety and value. The boxes come in four sizes with about 50% fruit and 50% vegetables. Seniors and the disabled get a 10% discount and they do not accept EBT. Boxes can be customized; customers can opt out of an item and get credit for it or choose something else. Customers can also add items such as eggs, nuts, corn, and rice. Customers might not know which items in the box are local; however, details of sources are available on the website, and the newsletter often highlights a local farm. About 350 to 400 members order a box each week. Deliveries are scheduled in and around Concord to ensure sufficient density to make delivery cost effective. Their competition is Good Eggs and Farmigo; both are online home delivery services in the area. An obstacle Doorstep Farmers faces is that it is difficult to find local organic farmers. Farmers do not want to get certified even when he offers to pay for certification. Another major concern is the ongoing drought. He is expanding to Portland because he anticipates he will lose business in California due to the drought.

The Food Bank of Contra Costa and Solano counties (hereafter, food bank) has 65 employees and 90,000 volunteer hours per year. In 2014, the food bank distributed over 20 million pounds of food, half of it through 180 partner agencies and half through their own service programs, often targeting seniors and children. They provide food for about 12% of residents of Contra Costa and Solano counties. They also provide outreach and information about EBT and assistance with housing, medical services, and utilities. The food bank receives some donations of shelf-stable food from large retailers through Feeding America; however, similar to other food banks in the US, retailer donations have been declining. They also acquire food from food drives; however, these function more to raise awareness about hunger than to source much food. The state association of food banks purchases produce directly from farmers as well as through wholesalers. Currently, half of all the food they distribute is fresh produce, mostly produce that can withstand handling. The food bank distributes 800 to 900 thousand pounds of fresh produce per month.

The Community Produce Program (CPP) is a mobile food pantry program that started with funding from a local hospital's trust fund. This provided two years of support and two refrigerated trucks. Now this program has a broad donor base and serves 50 sites, twice a

month each, distributing about 12,000 pounds of produce per day. Each family gets between 15 and 20 pounds of five to eight types produce that can withstand shipping, sorting and distribution. CPP distributes produce Monday through Saturday, with three stops per day. Each truck operates with one paid driver and about six volunteers. The trucks stop at sites serving low-income families and seniors: churches, community centers, schools, Boys & Girls clubs, union halls, and WIC offices. The goal is to distribute to 100 people per stop. Two stops that the researcher visited were at a church parking lot, where 150 families were served, and a WIC office, where 190 families were served. The clients were very diverse in age and ethnicity; while English and Spanish were the most common languages spoken, there were at least ten other languages spoken, including Russian, Ukrainian, Chinese, Hindi, Vietnamese, Arabic, Tagalog, and Korean. Clients are eligible to visit a stop twice a month. While the clients may not know that the food is from a local farm, it is clear from the lines that form before distribution begins that they want fresh produce.

The Urban Farmers is a grassroots, all-volunteer, 501(c)3 non-profit gleaners organization founded in 2008, located in the East Bay of San Francisco. It is a 100% volunteer organization. They plant fruit trees, glean backyard fruit in the Bay Area communities, and donate all fruit to a non-profit, which distributes it to those in need. Because of the climate, Urban Farmers operate almost year-round. In 2014, they harvested 105,000 pounds of fruit; in 2015 they expect to harvest 150,000 pounds. Their donations are too small for the food bank so they donate to White Pony Express, a small non-profit. It costs them 12 cents per pound of fruit gleaned. Urban Farmers has developed software for their operations that has streamlined their work. The prototype software is nearly done and Urban Farmers are looking for corporate sponsorship to produce a professional version of the software to run on all platforms and devices to be shared as open source production for other gleaning groups. Urban Farmers faces challenges with homeowners who treat Urban Farmers as a “fruit ambulance,” calling them at the last minute to “save their trees.” In addition, for maximum harvest, trees need pruning, which homeowner may not be willing to do or pay for. Another challenge is a lack of diversity of volunteers and more group requests to volunteer than can be arranged.

We also interviewed three urban farms in the area, two non-profit and one for-profit farm. One non-profit farm located in Contra Costa county is located on public land and produces primarily for its volunteers, provides educational services, sells to restaurants and donates some produce to a food bank. Another non-profit also is located on public land, has a paid staff, produces for a low income community at low prices, provides home gardening assistance, provided educational programs, and place to hang out in the community. The for-profit urban farm is a vertical farm producing high end produce for online sales on otherwise blighted urban land. The farmer noted the lack of city codes makes urban agriculture precarious. Even where it is legal the cost of permits can be prohibitive; \$3,000 vs a liquor store permit of \$50. He felt this is unfair and encourages the wrong sort of enterprises in Oakland. He sees the increasing scarcity of land, water and energy as incentives for the growth of urban agriculture and would like to see urban design incorporate farming. Given California’s drought, he believes the future of agriculture is intensive, high-tech indoor farming.

Ten interviews in and around Concord, California examined whether mobile markets and mobile food pantries could increase farmers sales and food access. The East Bay Area is a highly populated suburban area located near very productive agricultural land with a climate that allows year round production. The large population is very diverse and the poverty level is at or below the US average. Along with the agricultural productivity of the region, this has fostered over 60 farmers markets in the Bay Area as well as thriving for-profit home delivery services and high-end urban farms for local and organic foods. On one hand this reflects enormous demand for local food. On the other, it means that local food is often expensive and those who buy it are affluent. Furthermore, some participants questioned whether the increase in venues was helpful for farm sales or whether it simply increased costs to farmers by forcing them to sell at more venues. In addition, selling to more venues often means that the farmers markets are not attended by farmers, but by farm employees and hired vendors who often drive 300 miles to reach the market. This not only makes the “direct sales” less sustainable, it also effectively removes the link between the farmer and their customers.

Despite the high incomes in the area, there are pockets of extreme poverty. Non-profit organizations including urban farms, food banks, mobile food pantries and mobile markets try to provide fresh local produce to those in need. Often, they operate in the same areas, targeting the same clients, but food banks and pantries provide large quantities of food for free, while mobile markets and urban farms provide small quantities at below market prices. Both rely on grants and donors to operate. While these organizations see collaboration as difficult because some are giving away food and others are selling it, it is clear that they are serving the same people and also often getting funding from some of the same sources, so finding a way to collaborate could reduce duplication of effort.

In a state known for its regulations, it was not surprising that all the participants talked about the importance of regulations and local policies to foster rural and urban agriculture, create markets, permit sales, and encourage donations. Government was seen as a strong collaborator in many cases. The participants seemed much more aware of state and local regulations and policies than federal regulations or policies.

The East Bay has many contrasts. It is home to some of the most affluent communities in the US, as well as very poor communities with lack of food access. In most areas land is very expensive, yet in Oakland there is an abundance of abandoned lots and city ordinances largely encourage urban farming. Contra Costa County also has an abundance of fruit trees in homeowners’ yards, and much of the fruit goes unharvested. The East Bay is very close to farms that produce enormous quantities of fresh produce. The food bank has been able to access some of this food such that half of the food they give to their clients is fresh produce. They and other non-profits have also been able to mobilize a large number of mostly affluent volunteers willing to help harvest and deliver food to the needy.

What the region has in common is an ongoing and severe drought. While all the participants mentioned it, for the most part, the non-profit participants did not anticipate changes in California agriculture and at least implied that the drought would eventually end. But for the

two for-profit operations, the drought was seen as the new normal, as a paradigm shifter, something that could make growing food on California land impossible. For one, this meant preparing to emigrate as a “climate refugee,” for the other it meant high tech indoor farming would replace the current growing system. In both cases, those who could afford food would find a way to get it, but there was no mention of those who are already food insecure. The non-profits serving the food insecure, both inside and outside California, are not anticipating or preparing for a paradigm shift due to drought.

New Orleans

In New Orleans we conducted seven interviews, lasting between 12 to 83 minutes (45 minutes on average). They included three farmers and four organizations: a non-profit mobile market serving the Lower Ninth Ward; a food bank that operated mobile food pantries in the region; a for profit grocery store and food hub serving a low-income neighborhood; and a non-profit farmers’ cooperative serving immigrants. The FMPP funded mobile market in New Orleans was a cell phone technology rather than a market on wheels. However, the market was no longer operational and the grant recipient did not respond to our request for an interview.

Sankofa is a non-profit that operates a mobile market focused on increasing access to healthy food by seniors living in the Lower 9th Ward. It also operates a 6,000 square foot urban farm, an orchard, a school garden, and a meditation garden. Sankofa employs five full time staff and has a number of volunteers. The mobile market opened summer 2014 and operates two days a week making three stops: a weekly stop at a senior center and two stops that alternate weekly between two churches. The produce is sourced from Sankofa’s own urban farm and supplemented by produce bought from wholesalers. They sell about 60 pounds of produce a week to about 30 people. They accept EBT, SNAP, farmers’ market coupons, and offer \$1-2 off purchases of \$5 or more for answering a questionnaire that Sankofa uses to track customers.

Second Harvest Food Bank of Greater New Orleans and Acadiana a member of Feeding America, distributes over 23 million pounds per year of food to 20,000 people each week out of its two distribution centers in New Orleans and Lafayette. It works with 474 partners and programs across 23 parishes to distribute food. Its 90 full time employees, and over 50,000 volunteer hours also provide SNAP outreach, children’s and senior meals, shopping and cooking programs both on site and at stores, and are designing an aquaponic training program. In addition, it operates 37 mobile food pantries that distribute food directly to clients. While the mobile pantries are costly in terms of employees and transportation, they are able to reach rural areas and eliminate the need for partner agencies to pick up and transport the food. The food bank has been reaching out to farmers to diversity its food sources and to provide more perishables because large retailers, who have provided one-third of their food, are increasing their logistics efficiency, reducing the amount of non-perishables available to food banks. Furthermore, dollar corner stores are more profitable outlets for retailers than donating to food banks. Food banks also want to improve the nutritional quality of food available by providing fresh produce. Lastly, local produce offers opportunities to form partnerships with local farmers and food activists, enhancing the food bank’s community network to promote volunteering and donations. The food bank has a number of ways to obtain food from local farmers: donations;

seconds picked by the farmer or gleaned by food bank volunteers; growing specifically for the food bank (the “Plant a Row” program); and paying a Value-Added Processing fee of 10-15 cents per pound that covers the cost of picking, but allows farmers to qualify for a tax deduction for the donated produce. However, given that nearly half of Louisiana’s farms are less than 50 acres, many farmers are not large enough to make it worthwhile to pick up seconds, etc. so the food bank tends to work with larger farms.

Hollygrove is a for-profit branch of a Community Development Corporation on the edge of the New Orleans’s Hollygrove neighborhood; it has a poverty level of 27.0% as compared to the Lower 9th Ward at 31.3% (The Data Center, n.d.). Hollygrove has an urban farm, community garden, and a market that sells its own, as well as other local farmers’ produce. They employ 10 full time staff and work with 60-100 producers from Louisiana and Mississippi. Hollygrove believes that this model provides a consistent market to farmers and simplifies logistics by allowing them to drop their produce off rather than spend several hours at a farmers’ market. The produce can be purchased individually or as part of a non-commitment CSA box. Customers can either assemble the box themselves in the store or order it through Good Eggs, an online food hub that charges \$5 for delivery on a \$25 box.

Among the minority community in New Orleans there is a population of skilled farmers wanting to farm. A non-profit farmers’ cooperative emerged from a low-income Vietnamese, Hispanic and African American community following the BP oil spill in the Gulf of Mexico to foster income and promote food access through sustainable agriculture. The 4.5 full-time employees provide access to five acres of land to nine immigrant farmers, sell produce for them, and offer youth and health-based programs, including a nine-month curriculum on healthy eating. The farms produce specialty produce year-round that is sold to restaurants in New Orleans, through Good Eggs online retailer, at a local food coop, as a CSA, and at a farmers’ market. There are more low-income minority would-be farmers than they are able to provide land for. Within the 8-mile radius of the organization, much of the land is blighted with garbage, weeds and structures that are falling down. The land is owned by speculators, many of whom do not pay property taxes. Local authorities have been unable to collect the taxes or to claim the land for failure to pay the taxes. This has left this low-income community surrounded by damaged, unused land and the local government with no tax base to provide services.

The three independent farmers in this case study were all successful; they were able to sell their products at a profit to middle to high income customers at farmers’ markets, restaurants, and via a CSA. However, these farmers were all older, educated, second-career farmers who had capital from their first career, as well as access to land. They clearly farmed because they enjoyed it (and could afford to do it).

Louisiana has a 12-month growing season and its farmers benefit from many sales outlets: restaurants, caterers, online food hubs, farmers’ markets, and wholesalers. Despite this, the number of small farms in Louisiana is declining, food insecurity is high, and farmers are unable to sell at prices that are affordable to the poor. Famous for its food culture, over a quarter of New Orleans’ population has insufficient access to food, healthy or otherwise. Food banks in

New Orleans are overwhelmed by the demand for food. Mobile markets (or local fresh markets) do not address these problems because low-income people cannot afford prices that cover the cost of the vegetables, let alone the costs of operating the mobile markets. Poverty appears to be the main obstacle to expanding markets for agricultural products. Farmers' market coupons for the poor foster one time purchases but not repeat-customers; an alternative that would lead to ongoing sales would be half off coupons.

Poverty is also the main obstacle to expanding agricultural production and increasing the number of farmers in Louisiana. The independent farmers in this case study were older, second-career farmers with education and capital for land and operations from their first career. However, New Orleans appears to have a large number of residents who are skilled farmers unable to farm. The main obstacles are access to land and capital. Given that 20% of New Orleans consists of blighted homes or empty lots (Jericho Road Episcopal Housing, n.d.), making this land available and affordable is key to helping foster new farmers who could increase agricultural production and sales, improve food security and create jobs.

Baltimore

In Baltimore we conducted 12 interviews of 13 people. These included six farmers and four organizations: an FMPP mobile market; an urban producer cooperative; a food bank; and a non-profit gleaning organization. The interviews lasted 17 to 61 minutes with the average of 38.6 minutes.

Civic Works is a nonprofit organization focusing on education, community service and job skills that received an FMPP grant for its mobile market to improve food access, provide experience-based education to youth, promote urban agriculture in Baltimore, and demonstrate environmentally friendly agriculture. They promote food and agricultural education through field trips, hosting trainees, after school and summer programs, community events and cooking demonstrations in the community, senior centers and schools. Their eight-acre farm is located in Northeast Baltimore, where food stores are either far away, expensive, or do not offer healthy food. It is one of the founding members of the farm cooperative the Farm Alliance discussed below, and houses the infrastructure for the other farms. The farm has approximately 15 AmeriCorps trainees and 600 on-farm volunteers a year. The farm grows year-round, producing a variety of fruits and vegetables, and while it follows organic practices it does not have organic certification because they consider the cost of certification to be prohibitive. They sell at a farmers' market through the Farm Alliance, their own CSA with 64 members, and their mobile farmers market. The remainder of their produce is given to the staff or donated to a soup kitchen.

The mobile market evolved from attempts to operate pop-up farm stands with a pick-up truck around Baltimore. The stands took time to set up so they changed operations to a self-contained mobile market. It operates 8-9 months a year, four days a week; they estimate they serve about 2,000 people per year at 20 stops and through regular home deliveries. The home delivery stops often serve more than one person. In addition to selling their own products, they sell produce from other farmers in the Farm Alliance. The Mobile Farmers Market accepts all

forms of government assistance and offers the Farm Alliance's Double Dollars; in FY2014, about 50% of their sales were made to customers using one of these payment methods. The market is currently at capacity, employing two market team members who work 40-hour, 5-day weeks. While sales are sometimes difficult because people are unfamiliar with some products or growing methods, the mobile market is a way to engage directly with the community. Civic Works would like to expand their mobile market by including more stops; however, this would be too costly because it would require more employees and purchasing another truck.

Farm Alliance of Baltimore (Farm Alliance) is an urban producer cooperative in Baltimore formed in 2011. It operates democratically to help farmers make a living, improve food access, and promote economic revitalization and job creation in Baltimore. The members include 13 urban farms, about half for-profit and half non-profit. They share resources such as tools, a walk-in cooler, a greenhouse for seedlings, and workshops. The Farm Alliance has a stand selling pooled production at a well attended, year round, Saturday farmers' market, selling produce at premium prices. Since each member runs the stand only once every 2.5 months, it saves farmers time selling their products. The majority of the members also sell at other venues: two operate mobile markets selling at lower prices in low-income neighborhoods, four sell to other restaurants, most have their own on-site farm stand, some attend other farmers' markets, and some have their own CSA. Other benefits of Farm Alliance membership are being a part of a community and advocating as a group on city policies to support urban farming, such as agricultural tax credits and reducing barriers to using urban lots. Disadvantages include effort and commitment to participating and complying with organic practices. Another challenge is that most of the farmers are White and many of the urban farms are located in historically African-American neighborhoods.

The Farm Alliance has a training program through AmeriCorps for beginning farmers who want to farm in Baltimore. The biggest obstacles to farming are start-up capital and land; while there is no shortage of cheap land, urban soils are often compacted, anaerobic and contaminated. They also encourage local people to grow food for themselves and their neighbors. The Farm Alliance is interested in partnering with Chesapeake Farm to Table to build a second distribution center in the city so that urban farmers would have easier access to markets, such as online sales and restaurants. To promote food access, the Farm Alliance fundraises money for "Double Dollars," a program that provides people on public assistance with coupons that doubles the amount of produce they are able to purchase with their benefits. This has the effect of increasing purchases of produce by the low income and increasing revenues to urban farmers. In their pilot year, they reimbursed \$4,000 to four farms, this year they are working with 6 farms, and their goal is to expand it to \$10,000. To increase redemption of coupons, they want to increase outreach about the program.

The Maryland Food Bank (MFB) is the oldest food bank on the East Coast. It serves all but two counties in Maryland. It has approximately 140 employees and about 1,000 volunteers each year and distributed about 50 million pounds of food in 2014. About one fifth of the total distribution volume is fresh produce. It distributes food through about 1250 partner agencies, the majority of which are faith-based. MFB delivers food to about 75% of the agencies, the rest

pick up at the food bank. MFB also offers: meals to children and seniors; SNAP outreach with an emphasis on seniors; and a commercial kitchen with culinary training for people with low job prospects. Given the high rates of child poverty and food insecurity, MFB operates food pantries in 130 out of 180 schools in Baltimore. Mobile food pantries (“Pantry on the Go”) are used in areas where partners lack infrastructure or service areas where partners do not exist. The mobile pantries distribute food immediately, avoiding the need for storage facilities. In 2014, the mobile food pantry logged more than 1,000 events, distributing over 5 million meals.

While retail rescue of shelf stable items is still important, MFB focuses on collecting meat, deli, produce, and baked goods that are frozen on the sell-by date. Two years ago it offered to run The Emergency Food Assistance Program (TEFAP) for the state. MFB also receives \$3 million from the State of Maryland. Most of this funding is used to buy produce from Maryland farmers through the Farm to Food Bank program. It involves 72 farms from five to 1,000 acres. MFB contracts with the farmers to pay the proposed cost of growing food on a specific parcel; the food is then donated to the food bank. MFB would like to establish a cost-sharing program with the food pantries to increase the scope of this program.

Gather Baltimore is a non-profit founded in 2012 by an urban farmer to provide healthy and affordable food to Baltimore residents in need. It operates out of neighborhood grocery store. The walk-in coolers were funded by a \$60,000 grant from the Open Society Institute. Gather Baltimore is run by the founder, one employee, and numerous volunteers; sometimes they are joined by AmeriCorps Vista members. They source 10,000 pounds of local produce by gleaning and donations from farmers markets and farms, as well as from a large retail distribution center. Farmers at the farmers’ market are willing to donate produce so they do not have to transport it back to their farm and because it goes to people who otherwise could not buy thus, not lowering sales. Gleaning is more difficult; the founder has worked with farmers for a number of years so they trust him in their fields. It is important to farmers that the produce is distributed by asking for a donation rather than for free; it connotes their efforts have value. The relationship with the retail distribution center arose because it is costly for them to dispose of produce that cannot be sold due to imperfections. Both farmers and the distribution center get a tax deduction for their donations and are also covered under the Good Samaritan Act. Volunteers sort the collected produce into 30-40 pound bags. Recipients are asked to donate \$6 for a bag; however, people are not turned away if they cannot afford it. The fresh produce is distributed to 300-500 families in need each week.

In Baltimore, we interviewed six farmers: four urban farmers and two rural farmers. Three of the four urban farms were non-profit, operating on one to 1.5 acres of land each. One urban farm and both rural farms were for profit, operating on 6.5, 0.5 and 16 acres each. Two of the non-profit urban farms sold at the Farm Alliance farmers’ market stand, and one sold to their mobile market as well, while the other operated a bike powered mobile market. These mobile markets tend to charge lower prices than the farmers’ market to accommodate low-income residents and both accept all forms of government benefits and Double Dollars. The non-profit farms had one to three fulltime employees and many volunteers, and one even had three part-time employees and an AmeriCorps volunteer. The for profit farms were run by the owner(s)

with a part-time employee in two cases, and supplemented by free labor from family, a Master Gardener class, a worker share and Future Harvest trainees. All the farms sold at farmers' markets, two of the urban farms had weekly farm stands, three had CSAs, two sold to the Chesapeake Farm-to-Table, one to restaurants and one to a senior center. The most profitable venues for both urban and rural farmers in Baltimore are farmers' markets in more affluent neighborhoods because they attract consistent foot traffic and consumers are willing to pay premium prices. CSA's are another profitable venue and they provide farmers with money prior to the start of the season.

The problems identified by the non-profit farms were problems with soil, access to water, leasing land, which made land tenure precarious, labor, vandalism and theft. One farm indicated that urban farming increased property values and can make housing less affordable. The two rural farmers indicated labor, pests, markets and low incomes were problematic. Delivery to the city was seen as inconvenient. One felt that urban and rural farmers were competing with each other and blamed low income on urban farms undercutting prices at a farmers' market. Interestingly, the for-profit urban farm run by an African-American couple indicated they had no problems other than weather.

Overall, fresh produce seems to be abundant in Baltimore, yet food access is an issue given the high levels of poverty, food insecurity, and demand at food pantries. Although Baltimore is not a USDA designated food desert, many neighborhoods only have access to corner stores, supermarkets are distant, prices are high, and produce quality is poor. Clearly the community wants fresh produce; this is evident from their reactions to receiving produce from the food bank or Gather Baltimore, and the participation and volunteering on urban farms.

We found mobile markets increased sales in low-income communities and served as an additional marketing venue for small farmers in Baltimore. However, mobile markets rely on grants and fundraising for operations and government benefits and Double Dollars to make produce affordable. Their sales volume is overshadowed by the need in these communities and the vast amount of food that is being given away by food pantries and almost for free by Gather Baltimore. While mobile markets and other non-profit programs increase local farmers' sales at prices similar to those at affluent farmers' market, these programs cannot exist or expand without outside funding. It would be more cost effective to put money directly in the hands of consumers to buy fresh produce than to fund non-profits to do so. This would also benefit both local farmers by increasing their sales.

Worcester

In Worcester, we conducted nine interviews: five with local organizations and four with farmers. The organizations include four interviews with the Regional Environmental Council (REC), which operates a mobile market and farmers markets that serve low-income neighborhoods. The interviews included the program director, two mobile market assistants, and a project coordinator formerly in charge of farmers markets. We also interviewed the Worcester County Food Bank; it buys produce directly from farms, funds a half-off farmers market coupon program for EBT and is a founder of the Worcester Food Policy Council. One of the farms was a

multi-plot urban farm for 60 refugee families; they sell New England vegetables through an REC CSA and ethnic produce through the REC mobile market and farmers markets. The interviews lasted 18 to 88 minutes and were 44 minutes on average.

The Regional Environmental Council (REC) was founded in 1971. Their programs focus on food justice, serving 8,000 people a year. They include: a mobile market; 60 community and school gardens; a youth urban agriculture program for 35 teens on two urban farms; two farmers markets; and development of a food hub in Worcester in collaboration with the local food bank, city legislature, and other stakeholders. We focus on the mobile market and farmers markets.

The REC mobile market was started five years ago, inspired by the People's Grocery mobile market in Oakland, CA, because the two REC farmers markets were not accessible to everyone due to lack of transportation and REC was unable to start more farmers markets due to lack of sufficient returns to farmers. The mobile market offered a solution. It began as a pilot program using a donated van from the Worcester Regional Transit Authority. It operated for two months in the late fall of 2012 with nine stops on two days a week. Initially, the van did not have refrigeration; they had to use a walk-in cooler in a senior center at one of their stops. The pilot was successful and in their second year, REC received funding from the Harvard Pilgrim Foundation for the colorful wrap and marketing; and an FMPP grant, which paid for a walk-in cooler. The REC staff questioned whether mobile markets can be sustainable because they know that funding is provided for a short period. So they would like to create more marketing partnerships with WIC and the Family Health Center or possibly find corporate sponsorships, although they have found that locally, potential sponsors have not been attracted to their customer demographics. Rather, these potential sponsors are interested in affluent "foodies," and therefore are interested in sponsoring high-end farmers' markets.

The mobile market offers fresh produce and following the advice of a business consultant, offers staples like bread, cheese, tea, and honey. The produce is sourced from 5-6 farmers from their farmers' market; this is a strategy to save the farmers' time at their low-income farmers markets and increase their sales. Also to increase sales and make produce more accessible, they accept EBT, WIC and Senior Farmers Market coupons, and a half-off EBT program. In 2014, \$11,700 of the total sales of \$57,500 were EBT transactions; this increased to \$19,700 in 2015. Due to the outside funding for their employees, REC is able to pay farmers close to retail price. The mobile market currently has five stops a day, three days a week. The stops were selected based on applications and given a trial period the previous fall to ensure sufficient interest. The mobile markets stops at housing complexes, senior centers and public locations. The stops with the best sales are at a local bus station and the summer farmers market on Worcester Common outside of the City Hall, and senior stops, specifically those with Eastern Europeans and Southeast Asian residents because these seniors are used to open air markets. The stops with low sales are at public housing units for families. On average, 25-30 people shop at each stop with some stops reaching 100 customers. Each stop is unique in terms of the clients. The mobile market offers ethnic foods that are culturally appropriate by sourcing from immigrant farmers. To ensure that their activities and products appeal to customers, the staff work with farmers who represent the cultures the customers are from, they hire staff from the neighborhoods,

they speak a variety of languages, they provide written materials in six languages and they strive to make people feel welcome and comfortable.

The REC farmers market began to utilize produce from the youth employment program at an urban farm operated by REC. In 2008, the success of piloting a one-month farmers market in a low-income neighborhood encouraged REC to continue with a full season. Prior to this, no farmers markets in Worcester were located in low-income neighborhoods and EBT was not accepted at the existing farmers markets located in affluent neighborhoods. Later, REC took over an existing market in an affluent neighborhood after their market manager passed away. These two REC farmers markets accept EBT, farmers market coupons, and offer half-off the price of up to \$40 per day for EBT users. The funding for the half-off program comes from the food bank, UMass Memorial Medical Center, Harvard Pilgrim Health Care, and Project Bread. Similar to their mobile market, 48% of the customers at the low-income farmers market used government assistance, while only 17% in the more affluent farmers market, but the numbers have been steadily increasing for both. In 2014, the markets earned about \$81,000; EBT transactions amounted to approximately \$15,400 in 2014, increasing to \$23,100 in 2015.

The vendors at the farmers markets predominantly sell produce. The farmers at the markets also represent the predominant ethnicities in the community; as such, they provide culturally appropriate produce. There are four to five farmers at each market with some overlap, and all these producers also sell at farmers markets elsewhere. The more farmers markets they go to, the more time it takes away from farming and it is not clear if multiple farmers markets increase the number of customers or simply make it more convenient for existing customers to reach a market. Additionally, the low-income REC farmers market typically has lower prices than the other markets. So to encourage farmers to participate in markets, REC provides other sales opportunities such as the mobile market and restaurant sales. However, due to limited staff time, these programs have mixed results.

Massachusetts is served by four food banks, of which Worcester County Food Bank (hereafter, the food bank) is one of a few single-county food banks in the US. It has 17 full-time employees and 313 volunteers who donate over 5,000 hours a year. In FY 2014, the food bank distributed 5.4 million pounds of food, with the highest volume being animal protein, followed by fresh fruits and vegetables. The food is distributed with the help of 138 non-profit partner agencies, including food pantries and community meal programs, many of which are faith-related. The majority of the food bank's \$1.7 million budget came from individuals. The two largest sources of food were the food industry and the Massachusetts Emergency Food Assistance Program (MEFAP), a state-funded program. The food bank uses MEFAP funding strategically to purchase food from Massachusetts, New England, and US companies, in that order. Food drives account for 2% of the food distributed by the food bank; however, they are helpful to target specific foods, such as gluten-free or low-sodium foods. In 2003, the food bank began a program with local farmers to deliver surplus products directly to the food bank. In addition, the food bank has a unique collaboration with the Community Harvest Project, a mostly volunteer 16.5-acre farm and 30-acre apple orchard that produces and donates about 300,000 pounds of produce to the food bank.

In the past 20 years, the number of people receiving food assistance has doubled from approximately 50,000 to 101,700 with each person visiting a food pantry on average 4-5 times per year. To mitigate this the food bank established the Worcester County Food Bank Fund to End Hunger in 2011 provide grants to increase access to healthy food and/or support individual and household economic self-sufficiency. In four years, the fund has distributed over \$258,000 in grants. The food bank pointed out that legislation requiring a \$15 per hour minimum wage would be a good start toward meeting people's basic needs for safe and affordable housing, high quality food, and good education.

In 2002, the food bank decided to become more involved in food justice and food systems work to promote a long-term solution to hunger. In 2005, the food bank and its network of partner agencies co-sponsored a community forum on hunger to engage community leaders from business, education, and local and state government to find solutions to hunger. One initiative that evolved from the forum was the creation of the Worcester Food Policy Council, a coalition from agriculture, education, faith groups, government, public health, healthcare and anti-hunger. The food bank funds it and the manager is a staff member of the food bank. Between 2007 and 2012, The Health Foundation of Central Massachusetts, provided \$1,557,443 in funding to support the Council's Hunger-Free & Healthy Project. The project's strategies included food stamp outreach and application assistance at health care centers and hospitals, improving the quality of school meals, establishing school gardens, farmers' markets in low-income neighborhoods, and nutrition-based cooking and budgeting classes. A strong advocacy agenda related to nutrition, health, and hunger complemented project components. At the state level, Hunger-Free & Healthy and the Worcester Food Policy Council were part of a broader coalition that advocated for the establishment of a Massachusetts' Food Policy Council in 2010, and advocated for school nutrition legislation at the state and federal levels.

One of the REC's partners is a multi-plot urban farming program offered by a non-profit refugee social services/resettlement organization. It works with 60 families of refugees, immigrants, or recent citizens from Bhutan, Burundi, Kenya, Somalia, Vietnam, Poland and other countries. The farmers collectively grow about 60,000 pounds of produce a year. It leases two plots of about five acres each and maintains three Worcester lots in partnership with the city and REC. There are more people who would like to become farmers, but currently the organization cannot expand given their budget for staff salaries, even though more land is available. Wholesale orders are time-consuming because there are 30 plus plots. Instead, they would like to train the farmers to be able to sell at the farmers markets by themselves. So the staff are training farmers to calculate prices, manage the cash drawer, and communicate with customers, although language barriers limit the independent sales opportunities of some farmers. The organization also provides the families with resources like seeds, soil amendments, technical assistance, classes, marketing services, and organizes a CSA, farmers markets, and other sales. The CSA provides the farmers with a stable income for growing traditional New England crops for customers who are mostly middle-income. The farmers are known for growing specialty crops from their home countries, which they sell at the REC low-income farmers market and at two mobile markets serving low-income communities, one operated by REC. It is the only farm

that provides the mobile market with ethnic crops. During the site visit, people lined up in front of their stall a half hour before they opened. In addition to being culturally significant, the ethnic produce is fresh, and affordable, particularly because they accept EBT and the market offers half off EBT sales. EBT sales account for approximately 60% of their total sales.

We also interviewed three other farms. A three-acre urban farm was a non-profit that operated a 35 member CSA that attracted membership from outside the neighborhood. The 300-acre rural farm was multigenerational farm that sold at 21 farmers markets including the REC farmers market and mobile market. While the farmer viewed her experience with REC positively, she would like to have access to a farmers market in Boston. Despite the fee of \$100 per day, she could sell more in one day in Boston than she does by selling at 21 farmers markets in smaller towns, and could also significantly reduce the time and labor costs of selling. The 20-acre rural farm sold at affluent farmers markets and had an online store. They believed the obstacles to farming were competition.

Overall, in Worcester we found that the REC mobile market and low-income farmers markets are successful at bringing fresh produce to low-income neighborhoods and expanding farmers' sales to customers the farmers would not otherwise reach. REC's projects are based on a community applications, the REC staff are hired from the neighborhoods they serve, and the ethnic produce has cultural significance to the diverse communities they serve. This is possible due to their work with an urban farm, which supplies their low-income farmers market and mobile market with ethnic produce that matches the community's needs.

An important theme that emerged from these interviews was the partnerships between multiple stakeholders including farmers that focus on ending hunger in Worcester. As opposed to other sites, Worcester is quite a small city, and the local food bank serves a single county. While that the food bank collaborates directly with fewer farmers than other food banks, produce is the second largest category of food it distributes. Furthermore, the food bank is heavily involved in supporting local food programs and policies in Worcester County, founding and funding the Worcester Food Policy Council. The food bank supports farmers indirectly by funding nonprofit programs for youth and/or immigrant farmers to expand urban agriculture and by providing matching funds for doubling the amount of produce for SNAP users can buy through REC mobile market and farmers markets.

Unlike the other sites, we did not find land, water, and infrastructure to be the main obstacles to farming in Massachusetts. Perhaps this is because the participants were able to either purchase or lease land with grant money (for non-profit farmers) or had a family farm (for-profit farmers). One of the most commonly mentioned difficulty was selling at multiple farmers markets and competition with other farmers. Similar to Concord, farmers reported going to a number farmers' markets, which requires more labor and takes away their time from the farm. While stall fees are more expensive, the Boston farmers' markets was seen as more efficient because farmers could sell everything at one market in one day.

While expanding mobile markets in low-income neighborhoods could increase farmers' sales, this would require additional funding for another van and more staff time. Funding for double-dollars seems to be a more cost effective way of increasing sales at farmers markets. What is novel about this site is the role the food bank has played in providing money for the double-dollar program. Rather than allocate money for staff, vehicles and food to operate a mobile food pantry, they provide money to allow low-income people to purchase local food. Not only does this appear to be a more efficient use of funds, it does not undermine sales of local food by providing produce for free. On the contrary, it increases sales of local food by increasing the purchasing power of low-income consumers.

Adrian

In Adrian, Michigan, we conducted eleven interviews lasting 21 to 78 minutes (48 minutes on average). They included five organizations: an FMPP mobile market; its parent organization, a hospital; a food bank that contracts directly with farmers for produce and operates mobile food pantries; a mobile food pantry; and a food pantry. We also interviewed five farmers and a 4-H instructor.

The Veggie Mobile is an FMPP funded mobile market begun in 2013 through the collaboration of ProMedica Bixby Hospital, the Lenawee Health Network (LHN), and local farmers markets and producers to make fresh, affordable produce available to Lenawee County residents. ProMedica Bixby Hospital is the administrative home for Veggie Mobile. The FMPP grant paid for the truck and driver, but when the grant ended, ProMedica took over the costs of operating the truck and drivers' salaries. A key initiative of the 23-member Lenawee Health Network (LHN) that resulted from ProMedica's Community Health Needs Assessment was to provide access to healthy foods.

The Veggie Mobile operated five days a week, year round, and served 13 sites in nine communities throughout Lenawee County, many at senior centers. Targeting senior centers was a strategy to reach those on fixed income where many gather inexpensive lunches. In Adrian, the stops include public service offices, a street corner across from a corner grocery, and a low-income housing site, in addition to a senior center. The Veggie Mobile accepts SNAP, but is not yet eligible for Double Up Food Bucks. The truck is refrigerated and fitted with shelves to hold the produce for two to three stops a day. The Veggie Mobile buys from a wholesaler to ensure a variety of products and directly from local farmers, paying them full retail price. There are two employees, but only one person operates the truck at a time. At the stops, the lead driver very carefully arranged the produce on tables in an attractive display. Over 30 types of fruits and vegetables were offered at very reasonable prices. As people purchased items, she immediately restocked the display. She engaged passersby who might otherwise not stop, offering discounts if they expressed concern about lack of money, breaking apart packages to sell more appropriate quantities of food, even selling a single clove of garlic to accommodate the needs of her customers. Furthermore, she kept detailed records of sales by location and type of product. The staff at the senior centers clearly liked the Veggie Mobile; they helped with set up and conversed freely. The residents at an assisted living site saw the weekly visit of the Veggie Mobile as an event; they clearly were waiting for its arrival and used the opportunity to

socialize. They talked about how the Veggie Mobile meant they did not have to leave the building to get fresh food. As many as 80% of the residents could no longer drive or did not have access to cars. While the stop at the street corner had the fewest customers, two things were clear: the manager had a great relationship with the corner store across the street and the customers who knew about the Veggie Mobile bought large amounts of produce.

ProMedica is a nonprofit health system providing health care services to 27 counties in northwest Ohio and southeast Michigan. ProMedica's Bixby Hospital is the largest employer in Adrian (City of Adrian, 2012). As part of the Affordable Care Act, all ProMedica hospitals participate in Community Health Needs Assessments (ProMedica, 2013), they found that 37% of adults in Lenawee County are obese, as compared to 31% in Michigan and 27% in the US, and another 40% of adults in Lenawee County are overweight. They also found that only 5% of adults, 15% of the youth and 9% of children in Lenawee County meet the recommended guidelines of five or more servings of fruits and vegetables per day. The Veggie Mobile food is one of ProMedica's strategies to make fruits and vegetables more affordable and accessible in the county. Responding to a critique that the Veggie Mobile was competing with the farmers market, the administrator said, "We are not out there to take your business. We're [here] to help people who can't get to your location." Given the relatively small amount of sales, the Veggie Mobile seems to be a more efficient way of getting local food from several farms into the hands of customers than starting a new farmers market in every community. This is relevant given farmers complaints about the proliferation and costs of going to many markets. The ProMedica administrator pointed out several obstacles to expanding access to fruits and vegetables. One was that, although they purchase produce directly from farmers, because they did not grow the produce themselves, Veggie Mobile is not eligible for USDA farmers market coupons. Another challenge to expanding access to fresh produce was how to collaborate with corner stores to help them offer more fresh produce; as a nonprofit, the logistics of ProMedica collaborating with a for-profit to sell produce need to be worked out. Another challenge has been the lack of cooking skills, the need for education and simple recipes.

The Food Bank of South Central Michigan (hereafter food bank) is a 501c3 non-profit affiliated with Feeding America (Food Bank of South Central Michigan, 2016) and are one of seven food banks in the Food Bank Council of Michigan. The food bank serves over 189,000 people a year about 10 million pounds of food in eight counties in southern Michigan, including Lenawee County. Since the financial crisis in 2008 most of the food pantry clients have at least one person in the household working full-time or numerous part-time jobs. The food bank has 19 employees, over 9,100 volunteers, and 285 partner agencies. They distribute food to partners who operate food pantries, provide SNAP outreach, and coordinate the Kids' After-School Pack program in schools, providing kids with food for the weekend. Finally, the food bank coordinates the Fresh Food Initiative, a mobile food pantry that distributes fresh food to pantries, neighborhood churches, and business parking lots that provide space. Because many partner agencies do not have the infrastructure to store and distribute fresh food, the food bank has developed this mobile food pantry program.

Given the location of the food bank in Michigan, they get a lot of donations foods from Post, Kellogg's and ConAgra and work with distribution centers like Target, all of which are located in the area. Feeding America has a national sourcing program that permits them to get food simply for the cost of shipping. They also have retail pickup from grocers both directly and through Feeding America, receive state monies to purchase foods, have food drives, have food donated by community gardens and farmers, and the Michigan prison system grows food for them. Food drives represent a minor and costly source of food due to sorting, but are important to raise awareness about hunger. The Michigan Food Bank Access to Nutrition program provides funding to purchase produce through a state grant. The Farm to Food Bank is a program whereby the food bank contracts directly with farmers to purchase crops grown specifically for the food bank's needs. In addition to acquiring and distributing food, the respondent indicated that advocacy is a new function of food banks.

The Fresh Food Initiative (FFI) mobile pantry operates in eight counties, including Lenawee County. The FFI operates six days a week, year round, although there is more fresh produce in summer. They serve about 200 households at the Adrian food pantry stop. The food provided at FFI is mostly bulk fruits and vegetables donated by local farmers and wholesalers. In some cases the farmers grow specific crops for the program. One of the farmers interviewed in this study contracts with the food bank, providing peppers and squash. FFI also includes baked goods donated through store rescue and some fresh meat. To encourage fruit and vegetable consumption and foster cooking skills, FFI uses a new program called Access to Nutrition to provide recipes, taste tests, and instructions about preservation. Initially, they included cooking demonstrations, but found people preferred samples and simple recipes, and the best use of the volunteer chefs from a local casino was to simply answer people's questions. FFI also works with Michigan State University extension to show people how to use food, how to budget and how grocery stores can manipulate them. Working in the community has been more effective for Extension programs than providing them at the County building, which can act as a barrier. FFI also works with a grocery store that provides gift cards to clients who take classes.

The FFI representative praised the Veggie Mobile and pointed out that they were both on the Hunger Free Lenawee committee. She believed they served the same people and that there was a need for both services because there were so many different kinds of people in poverty and many did not necessarily fit the guidelines to receive government assistance or fit them and did not ask for benefits. She also pointed out that in some cases people did not want help, in others they needed only occasional help, and in others they needed regular food assistance. She felt the Veggie Mobile allowed people to buy affordable food when they were able and FFI helped them when they needed free food.

Like many food pantries, the local food pantry hosting the FFI stop is operated by a religious organization. They provide worship and counseling, emergency financial assistance, disaster assistance, run a thrift store, community meals, and operate a food pantry. They also provide shelter to 30 clients a day, breakfast seven days a week to their clients, and dinners to the community Mondays and Wednesdays, serving about 125 each night. The food pantry operates four days a week, serving about 200 households each month. They require documentation of

income, serving those who are up to 200% of poverty level. While they used to allow monthly visits, currently, households can only visit once every three months because they could not keep up with the demand. However, they would not turn anyone in need away, and in particular, they allow people who just signed up for food stamps to use the service more frequently because of the delay for SNAP benefits to start. Their clientele has changed, with many working full-time but unable to make ends meet. They cited factories closing, economic restructuring that resulted in lower pay and benefits, and lack of educational and retraining opportunities as causes for clients needing their services. They also explained that people who are not using their services, but would be eligible, tend to be seniors, who were raised to feel shame at having to ask for help, especially for food.

Their food pantry sources much of their fresh food directly from local retailers, bypassing the food bank. In addition, a farmer plants tomatoes and corn specifically for the pantry and donates the food. While the pantry offers fresh food, the FFI offers larger quantities and all the FFI food is from local farms. FFI comes to their site one day a week, serving between 175 and 225 families in a day. The food bank provides the food and employs the person running the FFI site. One of the obstacles to using fresh food are lack of cooking skills, particularly among the young. They wanted to offer cooking classes and budgeting classes as part of the food pantry to help young people better manage their health and finances. However, they identified the biggest obstacle as young people being used to buying what they want. They also talked about the need for government to have compassion to provide services, “educating our legislators ...that not everybody is as smart as you are and they're going to need some extra help. And making it more difficult for them is not the solution to saving money.”

We also interviewed five farmers and a 4-H instructor. All the farmers sold at multiple venues. Four of the five farmers also sold to the Veggie Mobile and the fifth contracted with the food bank. For the farmers the mobile market or the mobile pantries were an important, though often small, sales venue. Sales to the Veggie Mobile represented a small, \$40 to \$50 a week, but stable source of income. The farmer who contracted with the food bank farmed as a second career and the food bank was one of 15 organizations he donated food to, in addition to selling from his farm and in Battle Creek. The farmers discussed the difficulties in selling food as well as getting into farming. The farmers markets in and near Adrian are quite small, the customers have limited income, and sales are volatile. Thus, the mobile market acts as a more efficient solution to target small communities than starting farmers markets in every town in Lenawee County. One problem of course is that the mobile market cannot accept USDA farmers market coupons. This is a consistent limitation to the effectiveness of mobile markets that we have seen in other communities. The Double Up Food Bucks program in Michigan represents a potential model. It allows recipients of federal assistance to double their purchases of Michigan produce at farmers markets and participating stores; it does not require direct purchases from farmers. This expands sales of Michigan produce as well as increasing availability of fresh produce to low-income families.

The biggest difficulty the farmers faced was weather; it was foremost on their minds because rain in 2015 caused a lot of damage. In terms of getting into farming, money to buy land and

equipment were seen as the biggest obstacles, as well as knowledge about farming. Most of the farmers interviewed felt the best source of information was other farmers. Labor or lack of time was also a problem for most farmers. While a few of the second career farmers saw the USDA, Michigan State University, and Extension as resources, more traditional farmers viewed the government as an obstacle. A farmer and agricultural instructor both talked about how they believed US agricultural policies for cash crops distorted the market, crowding out specialty crops and inflating land prices by capitalizing subsidies and insurance payments in the value of land, thus increasing the costs to get into farming. A common theme was that most of the farmers eschew paperwork, viewing regulations as involving needless and complicated forms. They would like regulations, for example for organic certification, to be easier and cheaper.

Overall, the success of the Veggie Mobile stems from: strong support by ProMedica Bixby Hospital, a lead driver who is a gifted salesperson and number cruncher, and a strategy that focuses on senior centers where mobility and fixed incomes limit access to healthy foods. The Veggie Mobile visits senior centers throughout Lenawee County and several low-income sites in Adrian, and provides affordable, fresh produce. The Veggie Mobile buys some of its produce from a handful of local farmers, providing them with a modest but steady income. The farmers value the income, the positive relationship with the lead driver, and feeling that they contribute to food access in their community.

Given the high levels of poverty in Adrian, the local food pantry has been overwhelmed with demand for services. They have had to reduce the frequency that clients can get services from every month to once every three months. The regional food bank also noted the increasing demand for food due to the economy. A program the food bank developed is a mobile pantry to provide fresh healthy food. They have contracts with Michigan farmers to provide fresh food for the mobile food pantries. Rather than competing with the mobile market, which targets seniors, the mobile food pantries appear to be reaching a younger and more mobile demographic. Thus, the two services appear to be complementary. Together they provide healthy food access to a broader community than they each would individually.

Santa Fe

In Santa Fe we interviewed four organizations and six farms. The organizations included: an FMPP funding mobile market; a for-profit mobile market that collaborates with them; a food bank that operates mobile food pantries; and a non-profit that runs the farmers market and funds loans to farmers as well as a farmers' market double coupon program for EBT users that inspired state legislation to fund a statewide coupon program. The farms include two urban non-profit farms and four rural for-profit farms. The interviews lasted 34 and 78 minutes (55 minutes on average).

MoGro is a nonprofit organization run out of Santa Fe Community Foundation that is an FMPP recipient. In 2011, MoGro's began a mobile market using a small beer truck equipped to bring groceries and fresh produce to Pueblos between Santa Fe and Albuquerque. A lot of food was lost due to lack of refrigeration, so MoGro obtained a new truck that had refrigeration. However, it cost \$22,000 per month to operate, including staff, maintenance, machinery and

fuel. This was not financially sustainable given the communities they serve do not have the purchasing power to pay the prices or buy the volumes to cover the costs. An attractive solution was a partnership with Skarsgard Farms, a for-profit farm with a CSA home delivery service. Under this partnership, MoGro is able to provide CSA shares that retail for \$30 for only \$20 to community members in Pueblos. Skarsgard Farms provides the fresh, local produce to MoGro for a nominal markup, charges a monthly fee for truck and warehouse space, and charges a mileage fee for deliveries to Pueblo drop-off sites based on deviations from Skarsgard Farms usual routes. Skarsgard Farms takes care of the sourcing, packing, and distribution of the shares. Thus MoGro does not need to own trucks or storage facilities, nor does it need procurement or delivery staff, to provide fresh, local produce at reduced prices to the Pueblos. The partnership has reduced MoGro's expenses by 60%. Their current sales are \$17,000 per month and they have calculated that if they can reach \$60,000 per month they would be completely self-sustaining financially with their current staff of two employees and one Americorps volunteer.

Another key factor is MoGro only serves sites where local volunteers agree to help. These "local champions" are community members who are already involved in fitness and wellness; they distribute information, recruit and assist others to purchase the CSA boxes online, coordinate payments and coordinate distribution of boxes at the drop-off site. Customers can pre-pay or pay the local champion upon pick-up. MoGro accepts EBT and WIC, but cannot accept farmers' market coupons because they do not operate their own farm. MoGro has 150 CSA customers at five sites; unemployment rate in these communities is between 30-40%. The customers are tribal community members, low-income Hispanics and Latinos. One issue is that there is no refrigeration at the drop-off sites, and if the boxes are not picked up right away, the food may spoil. While they have identified food banks and pantries as potential partners to share the cost of refrigeration and other infrastructure, an obstacle is that it is hard to ask people to pay for food if they can get it for free from a pantry.

In addition to the CSA boxes, MoGro sells local food at wholesale prices for single events or recurring meal programs in the Pueblos. These sales bring in more money than the CSA deliveries and help to support the CSA delivery routes. MoGro also provides education activities, such as cooking workshops with community members, nutrition classes, and recipes in the CSA boxes. They are mindful that the foods and recipes offered are culturally relevant. They also work with local farmers who sell to them at reduced prices and donate produce or seconds. MoGro supports farmers in tribal communities with workshops and by buying from them to promote community economic development. These farmers get a better price than they would from wholesalers and can save time and fuel rather than going to a farmers' market.

Skarsgard Farms is a for-profit home-delivery CSA farm that sells organic products in Northern New Mexico and El Paso, Texas. They operate a 40-acre farm (half is owned, half leased) near Albuquerque that produces vegetables, some fruit, pigs, chickens and eggs. The farm includes two acres of greenhouses. Skarsgard Farms operates as a food hub; they purchase organic products from producers around Albuquerque, throughout New Mexico, southern Colorado and eastern Arizona to be able to offer a diverse range of foods to their customers.

Skarsgard Farms started as a traditional CSA farm selling only their own produce seasonally and members picked up their boxes. In response to member surveys and requests to offer more products, value, and convenience, they expanded their offerings by sourcing from other farmers, provided year-round service, and eventually offering weekly home delivery. In order to provide maximum flexibility and satisfaction, there is no commitment and members can swap items in their share at no extra charge. In addition to produce, members can select from baked goods, dairy, eggs, staples and processed foods. The source of all products is indicated on the website, allowing for identity preservation and additional advertising for the producers. While Skarsgard Farms tries to source foods members request, there are products Skarsgard refuses to provide because they are not organic, not produced locally, or they are deemed unhealthy. Members still have the option to pick up their boxes at a warehouse in Albuquerque, but can also opt for home delivery in Albuquerque, Santa Fe, Los Alamos, and El Paso, TX. In 13 years, Skarsgard Farms has grown to over 1,500 members and has 30 employees.

Skarsgard Farms sources predominantly from mid-size producers who produce too much food for a farmers' market, but are too small to sell to brokers. Skarsgard Farms offers prices that are higher than these producers would get from wholesale brokers. They are also willing to purchase "ugly" vegetables for half the cost and waste for their animals. Skarsgard Farms works with small growers on quality standards and explains consumer expectations. Products are dropped off at the Skarsgard warehouse by producers. Most products are repackaged into portable chilled coolers, which can keep products fresh for up to 48 hours, and are loaded immediately onto delivery trucks. Skarsgard Farms provides home-delivery in locations with a sufficient density of orders, delivering between 14-18 deliveries per hour. They offer day routes and night routes, so that members may get their delivery when they arrive home from work or when they get up in the morning. High density of deliveries makes home delivery cost effective and if home delivery replaces trips to the grocery store, Skarsgard Farms believes it can reduce the carbon footprint of food procurement. For their distant market, Skarsgard Farms contracts with other transportation companies to deliver coolers to reduce costs. These coolers are then delivered by Skarsgard vans in the local area. They plan to expand deliveries to southern New Mexico, west Texas and Arizona.

Members can set up a standing weekly order, opt out, or change their order each week through an online ordering system. Skarsgard Farms no longer takes phone orders because they take too much staff time and not cost effective. Orders must be placed 24 hours before delivery; this timeframe could be reduced if they had a third shift. Customers can order a standard CSA box that comes in three sizes: 10, 12 and 14 items at \$3 per item. Price comparisons indicate that the medium sized share is \$6 cheaper than similar products at a nearby Whole Foods; however, in contrast, all the produce at Skarsgard Farms is certified organic and the food is delivered to the member's home. Skarsgard attempts to stay in touch with their customers through a weekly paper newsletter included in deliveries, social media, and an annual member survey. Feedback has consistently indicated their customers want more food, more diversity, and freshness.

The Food Depot food bank serves nine counties in northern New Mexico working with 145 partner agencies to deliver 4.9 million meals last year. It is a member of Feeding America and the five-member New Mexico Association of Food Banks. The food banks work together to source produce; their goal is that fresh produce account for 50% of the food they distribute, currently they are at 41%. Like other food banks, The Food Depot relies on volunteers, although this is easy in Santa Fe because it is a retirement community.

In addition to the food distributed through their partner agencies, The Food Depot serves about 10,000 people in 22 rural communities using mobile food pantries. Mobile food pantries are a strategy to serve isolated rural communities that are far from services; some are up to two hours from the nearest grocery. The Food Depot delivers to sites monthly, and similar to MoGro, The Food Depot requires communities that want a mobile food pantry stop to find community volunteers to help distribute the food and to do their own outreach to bring in clients. Distribution needs to be done immediately because there is no storage or refrigeration at the mobile pantry stops. Serving a large area that has a low population density with many isolated communities is a challenge. Often there is only one road leading to the community, which makes deliveries more costly than if the community were on a loop route. Despite the mobile pantry locations being in rural, agricultural communities, there are few opportunities for backhaul, meaning there is no opportunity to reduce transport costs.

The Food Depot prioritizes in-state and nutritious food procurement. It is a challenge to get fresh produce and protein items because they are expensive to purchase and not often donated. To source fresh food, one strategy is to pick up leftover food at the Santa Fe Farmers' Market during the summer season. While compared to other sources this is a small amount of food, it is among the best and the freshest. Another strategy is to contract with the Navajo Agricultural Products Initiative (NAPI) to provide fresh produce. NAPI discounts their products for the New Mexico Association of Food Banks, selling misshapen or seconds for pennies a pound or for free with payment for packaging and freight. A final strategy is to source fresh food from food banks in other states. For example, a food bank in Nogales, Arizona shares foods they get from Mexico with other food banks if they are able to pick it up within 24 hours because there is no cold storage. This requires a quick response and may be difficult if there is no opportunity for backhaul. Collaboration with local farmers to source fresh food can be challenging for a number of reasons. There are no processing facilities or food hubs in New Mexico, so most produce is shipped out of state. While the number of small farmers is increasing, they have minimal surplus and transaction costs are high. The Food Depot is cognizant that asking farmers to donate food may run counter to their mission because farmers have to make living. Given the difficulties in procuring fresh food, The Food Depot is interested in growing their own food. They are also working with programs in Santa Fe that encourage people to garden and growing their own food. They see the network of volunteers they have as having potential to pair up people who teach gardening with those interested in learning to grow food. Sourcing fresh produce can present distribution problems because many partner agencies do not have the capacity to handle perishable foods. One of The Food Depot's priorities is to support their partner agencies by finding them cold storage equipment or even refrigerators.

The Santa Fe Farmers' Market Institute (FMI) is a non-profit sister organization to the Santa Fe Farmers Market. As a 501c3, the FMI can raise money for their services that is tax deductible to their donors. One of their most visible functions is operating the indoor farmers' market facility and collecting stall fees. The facility also houses FMI offices, a restaurant, other offices, and is used for occasional events and galas. FMI's programs to support producers include the following: a microloan program, workshops and trainings, and assisting farmers with land and water rights. In addition to supporting producers, FMI supports community and food equity. FMI offers educational activities, including visits to the market by elementary school students (Children's Nutrition Program) and a community movie night. One of their first programs raised money to match food stamp dollars, up to \$20 per market day. This program doubled EBT purchases at the farmers' market in a year. The program has inspired legislation that is being implemented statewide to provide \$400,000 in Double Up Food Bucks to people on public assistance. This program now matches up to \$50 of EBT or WIC purchases per market day at all New Mexico farmers' markets.

Community Farm was founded in the 1980's on land that was part of a private farm outside of Santa Fe. The farm has become a non-profit and its mission has turned to food donations; all produce is donated to the Food Depot and Meals on Wheels of greater Santa Fe. It produces 12,000-15,000 lbs for the Food Depot each year. A paid farm manager operates the farm. Additional labor includes volunteers from schools, church groups, AmeriCorps, and individuals. The Community Farm also provides affordable produce to their immediate neighborhood. They operate a farm stand where they sell their produce and give people in need free food. The founder and the farm stand sales pay the costs of operations and salaries of Community Farm. While Community Farm does not have fundraising events, they do have a kick-off event for volunteers and an "Adopt a Row" program. The program asks donors for \$100 in exchange for sponsoring a row of produce of their choice.

Gaia Gardens is a non-profit organization and the only urban farm in Santa Fe. Gaia Gardens are a diversified, certified organic year-round operation with a mission to demonstrate the viability of urban farming. They practice biodynamic methods, but are not certified. Gaia Gardens is on leased land; however, future tenancy is insecure because the owner is in the process of foreclosure. Gaia Gardens raised money to purchase the land but the financial problems of the landlord have complicated negotiations.

Gaia Gardens' main sales venue is the Santa Fe Farmers' Market. However, they believe it is not sustainable due to the need to transport products to the market, which involves a vehicle, fuel and a lot of labor to load and unload. Gaia Gardens also operates a CSA with 25 members, conducts educational workshops and works with two schools to create school gardens, provide plant starts, and farming education to kids. The founder does not believe this is a good use of school money; they pay him for 45 minutes with the children once a week during the school year. However, there is no program for the kids in the summer when the gardens are actually producing. Gaia Gardens view an onsite farm stand as less costly, would require less labor and foster food access in their neighborhood by producing food for 80 to 100 people who could

walk to the farm stand, further reducing transportation and greenhouse gases. They view this model of highly localized urban production as the future of urban farming.

The founder identified many difficulties with farming and urban farming in particular. The most prominent problem is the amount of work for little pay both for farmers and agricultural workers. The founder suggested they cannot earn a living wage because grocery stores do not sell food at the real price that it costs to produce and customers do not understand the real value of food. He believes that urban farmers cannot make enough unless they sell high-end specialty products to affluent markets, which runs counter to his desire to promote neighborhood food access. In addition, the cost of land is prohibitive for small farmers and water is an issue; even though there is a well on his land, they must pay costly residential water rates. Gaia Gardens has experienced numerous difficulties with the city, which lacks regulations for urban agriculture. These issues have generated a lot of publicity and local support (Albuquerque Editorial Board, 2015; New Mexican, 2015). Indeed, seven attorneys worked pro bono on issues related to water, land, zoning and marketing. Despite this, the city declared the farm stand to be illegal. So on August 13, 2015 Gaia Gardens left Santa Fe. Gaia Gardens presents an important example of how city legislature can support or thwart urban farming.

Interviews with four rural farmers revealed that small producers face a number of challenges in northern New Mexico. Access to land and capital are universal challenges they share with farmers elsewhere, as are the time needed to build soil and cultivate markets, the massive demand for labor, and the generally low returns to farming. The current system is unsustainable because returns are low and farmers are aging. Finding a source of reliable and documented labor is also an issue. The farmers in this case study are in their second career or inherited land; therefore, are able to subsidize their farms with savings or pensions.

In sum, New Mexico faces some unique challenges: it has an arid climate with scarce water, the population density is diffuse and it lacks a distribution network and infrastructure (such as refrigeration or commercial kitchens for value-added products), and it also has high levels of poverty and food insecurity. Despite this, it has a vibrant local food community that is developing some novel and cost effective ways to promote farming and food access. Some of these innovations are market driven. The partnership between for-profit and non-profit mobile markets demonstrate huge cost savings in delivering healthy food to low income communities, as well as creating demand for local products. Some of the innovations are more community driven. The local food bank has multiple partnerships with farms and organizations to source local food. The Farmers' Market Institute has fostered education programs, outreach, microloans and an effective coupon program that has been adopted as a state program to increase access to healthy, local foods by those on public assistance. The farmers themselves have developed many innovative marketing channels, but they face high costs and particularly for urban farms, a lack of supportive city policies that thwart urban farming.

Overall, the community is well aware of the issues and is trying to address them, whether through legislation built on the Double Up Bucks, the FMI providing loans and land access, the growth of Skarsgard Farms, MoGro's partnership with Skarsgard Farms, or expansion of Food

Bank into partnerships with farmers. The take away messages of this site are the benefits of working collaboratively and being innovative and the need for supportive local policies. While they have different ideas about how to get local food to the community, about attitudes, obstacles, they all care about getting healthy local produce to their community.

Conclusions

These 59 interviews at six sites with mobile markets funded by FMPP grants illustrate several models for improving food access. Concord, California is located in the affluent Bay Area, home to over 60 farmers markets and at least three on-line, profitable home delivery produce services. The number of farmers markets in the region means that most farmers send employees as vendors so they can sell at multiple markets and that while additional farmers markets are more convenient for some consumers, they tend to increase farmers expenses more than their revenues. Furthermore, many consumers cannot afford the produce, despite the fierce competition. The regional food bank has experienced growing demand for its services and because they are located in California, fresh produce constitutes half of the food they provide to clients. Given the volume of demand, for the sake of efficiency, they source produce from large farms. Mobile markets, gleaning groups and non-profit urban farms reach very small numbers of people by comparison, at much higher costs.

New Orleans also has a climate favorable for year round produce availability, but it is far less affluent than the East Bay and there are only a handful of small farmers' markets. As in California, the local food bank works with larger farms to supply fresh produce and operates mobile pantries, however, they operate mostly in hard to reach rural areas. We were unable to interview the FMPP mobile market that closed, so we do not know why it failed. Another mobile market we did interview offers a clue; their sales do not cover the costs of their employees and operations. A for-profit grocery store offers an important outlet for dozens of farmers, but despite being located in a low-income neighborhood, most of its customers are white and affluent. Farmers with capital (often second career) are able to make a living selling to affluent consumers at the farmers markets, CSAs, to restaurants and on-line, however immigrants with farming skills have difficulties accessing land. Large tracts of blighted, unused land are held by speculators who do not pay property taxes but Louisiana laws do not allow local government to foreclose on the land, leaving local coffers empty. Overall, New Orleans has high levels of food insecurity, many obstacles for would be farmers, and a lack of coordination among policy makers and organizations.

While Baltimore's climate is very different from New Orleans, it is similar in that there are high levels of poverty and food insecurity. Again, while a mobile market provides an important sales venue for some farmers, its sales are dwarfed by the demand for services from the food bank and mobile food pantries, and its sales do not cover the costs of employees and operations. Baltimore has many urban farms but they are often run by and sell to people from outside the community. Similar to New Orleans, there is a lack of coordination among policy makers and organizations.

Worcester provides an example of coordinated efforts by organizations addressing food access with involvement from the community. The food bank buys directly from farmers, funds a half-off farmers' market coupon program for EBT users, and founded and funds a food policy council that coordinates the efforts of policy makers and stakeholders to address the needs in the community. The non-profit parent organization of a mobile market is a member of this council. It operates farmers markets and many programs to promote farming and food access. It coordinates with a farm group to sell refugee farmers products at their markets. Their markets offer important markets for farmers and make culturally appropriate food accessible to communities that otherwise would not have access at prices they can afford.

The small city of Adrian had the highest levels of food insecurity and poverty in this study. It represents a unique partnership between a hospital and a mobile market. The model provides financial stability for the market; covering the costs of the employees, while sales cover the cost of operations. The mobile market has successfully focused on seniors, who often lack transportation. The program complements the mobile food pantries who often serve younger clients. The mobile market provides a small but stable source of income to farmers whose sales are limited by the high levels of poverty among their customers.

Santa Fe offers the most innovative partnership by a non-profit mobile market serving low-income communities, they have partnered with a for-profit mobile market. By doing so they have radically cut their expenses and have an achievable plan to be financially self-sustaining. The role of community partners is also vital to this plan. These partnerships are vital given that New Mexico is characterized by low-density rural communities that makes food access particularly difficult. In Santa Fe there were many examples of innovations to address food insecurity. There are partnerships between the food bank and local farmers. An urban farm pushing for change in local ordinances to foster highly localized urban farming. The Farmers Market Institute has been an important leader in Santa Fe, providing loans to farmers, educational programs and similar to the food bank in Worcester, funding a half off coupon program for EBT users. In addition, they have been successful in getting the state legislature to fund a statewide coupon program. This increases sales to farmers and healthy food access for the food insecure.

The lessons learned from these interviews are that whether it is a mobile market or mobile food pantry, collaboration and coordination with other organizations is key to improving access to fresh produce. The interviews highlight the immense need for food, particularly healthy food across America despite enormous efforts, infrastructure, volunteers and money being used by nonprofits to solve the problem in communities throughout the US. Of particular interest is the role of discounts or coupons for the poor for produce as an efficient means of improving healthy food access. These can serve to: reduce the cost of getting healthy food into the hands of the food insecure; increase demand for fresh produce by those who most need it; and increase farm sales.

We also identify many interesting trends along the way. For example, the proliferation of farmers markets, while increasing convenience to consumers, has increased competition and

costs among farmers as they need to visit multiple markets to maintain sales. We also found that organizations identified the lack of basic cooking skills and budgeting were major obstacles to healthy eating. We also found that many produce farms are often too small to donate much food. This presents a problem to food banks; the amount of seconds they could pick up is too few and purchasing the food is too costly for them. Providing funding to food banks directly so that they could purchase fresh produce from local farmers could increase demand for local products, address the issue of food insecurity, and help the food bank provide more nutritious foods. An intangible benefit of working with local farmers is assimilation to the community; strengthening ties between all actors in the food systems is perceived as beneficial to both local food movement and local community. This would help the food bank to raise more awareness and thus attract more donations and volunteers.

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Table 1. Poverty, food insecurity and SNAP benefits of the study sites and the US (percent of individuals in columns 1-4, percent of households in column five, 2014 data)

	Poverty*		Food Insecurity**		Households w/SNAP*
	Overall	Child	Overall	Child	
United States	15.9%	21.9%	14.7%***	20.9%***	13.0%
California	16.4%	22.7%	13.9%	22.9%	8.7%
Contra Costa County			12.5%	18.7%	
Concord	13.1%	17.9%			7.1%
Louisiana	19.6%	27.8%	17.3%	24.5%	16.4%
Orleans Parish			23.7%	26.0%	
New Orleans	13.1%	17.9%			7.1%
Maryland	10.0%	13.2%	12.7%	18.3%	10.4%
Baltimore	24.2%	34.6%	23.8%	25.1%	24.6%
Massachusetts	11.6%	15.1%	11.1%	15.1%	12.4%
Worcester County			10.3%	15.3%	
Worcester	22.0%	31.3%			22.9%
Michigan	16.9%	23.7%	15.7%	19.7%	17.1%
Lenawee County	14.5%	20.1%	11.9%	18.4%	15.3%
Adrian	29.9%	35.4%			31.8%
New Mexico	20.9%	29.4%	17.2%	27.2%	15.3%
Santa Fe County			13.5%	22.4%	
Santa Fe	18.1%	30.3%			10.3%

* US Census (2014)

** Feeding American (2015)

*** Feeding American (2016)

Appendix

Interview Questions (organizations)

1. How would you describe your mobile market/food pantry/organization?
2. Please, tell me about your products: What do you offer? Where does it come from?
3. How do you choose where to get your product from?
4. (If produce from local farmers) Could you tell me about the advantages and disadvantages of getting product from local farmers?
(If no produce from local farmers) Would you be interested in obtaining produce from local farmers? Why – or why not? What would prevent you from obtaining local produce?
5. Please tell me about the people who shop/receive food from you. Who are they? Why do they choose to come to you?
6. Please, tell me about the people who do not shop/receive food from you. Who are they? Why do they not choose to come to you?
7. How would (or do) your customers and/or your community respond to you obtaining local food?

Interview Questions (farmers who do not sell to mobile market/pantry)

1. How would you describe your farm?
2. What are the venues you use to sell your product? Can you tell me about why you choose those venues?
3. Have you heard of the [insert name of a mobile market/pantry] in town?
 - a. If yes: What do you think about this business?
 - b. If no, explain about the mobile market/pantry
4. Would a mobile market/pantry be a possible venue for selling your product? Why – or why not?
5. How do you think the market/pantry customers and/or local community would react to local produce offers?

Interview Questions (farmers who do sell to mobile market/pantry)

1. How would you describe your farm?
2. What are the venues you use to sell your product? Can you tell me about why you choose those venues?
3. Can you tell us how your partnership with a mobile market/pantry started and how it developed over time?
4. Compared to other venues, what is the volume of produce that you sell to the mobile market/pantry?
5. Are there any difficulties with using mobile market/pantry as a venue for your produce? Are there any advantages?
6. How do you think the market/pantry customers and/or local community react to local produce offers?